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## Fourth Semester B.Arch. Degree Examination, June/July 2024 Building Services – II

Time: 3 hrs.

Max. Marks: 100

*Note: Answer any FIVE full questions, choosing ONE full question from each module.*

### Module-1

- 1 a. Define electricity, its importance and implications on building design. (10 Marks)  
b. Discuss on various codes and standards governing electrical services in India. (10 Marks)

OR

- 2 a. Describe with a block diagram, the amount of power at every stage of generation, transmission and distribution of electricity from the generation station to the building mains (end users). (15 Marks)  
b. What are various sources of electricity? Explain with their working principles as block diagram. (05 Marks)

### Module-2

- 3 a. Describe with a block diagram, the distribution of electricity inside a high rise building premises (from HT incomer to the consumer's main in an apartment building). (12 Marks)  
b. Analyze the working principle of UPS and its components with a sketch of this system. (08 Marks)

OR

- 4 a. What are the different systems of electrical wiring with sketches and classify different types of internal wirings with neat sketches. (10 Marks)  
b. What is Net Zero Energy building? Explain the features of a NZEB home with help of a sectional sketch. (10 Marks)

### Module-3

- 5 a. Identify the need of protective devices in building electrical systems and their selection criteria. (10 Marks)  
b. Explain the working principles of circuit breakers with sketch. What different types of circuit breakers. (10 Marks)

OR

- 6 a. Explain the working principle of earthing system and plate earthing system with help of sketch. (12 Marks)  
b. Explain the working principle of lightning protection system in the building and its functions with components through sketch. (08 Marks)

### Module-4

- 7 a. Identify the factors contributing for good quality and quantity of light in an indoor lighting scheme. (12 Marks)  
b. Explore the advantages and disadvantages of CF lamps and LED lamps. (08 Marks)

OR

- 8 a. Infer with the help of sketches on how to integrate the day light and artificial light in indoors. (12 Marks)
- b. Define luminaries and describe 3 different systems in luminaries with help of sketches. (08 Marks)

**Module-5**

- 9 Define Extra low voltage system. Describe 3 types of extra low voltage systems used in commercial buildings with examples. (20 Marks)

OR

- 10 Draw an electrical layout of a Bedroom with attached toilet using symbols and nation in legend. Do the load calculation of the appliances and electrical fixtures of the above drawn layout for one day. (20 Marks)

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